



ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R09-OAR-2020-0618; FRL-10018-46-Region 9]

Partial Approval and Partial Disapproval of Air Quality Implementation Plans; Arizona;

West Pinal County; 1987 PM₁₀ Nonattainment Area Requirements

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) is proposing to approve in part and to disapprove in part the state implementation plan (SIP) revision submitted by the State of Arizona to meet Clean Air Act (CAA or “Act”) requirements for the 1987 PM₁₀ national ambient air quality standards (NAAQS or “standard”) in the West Pinal County PM₁₀ nonattainment area. The State of Arizona’s “2015 West Pinal Moderate PM₁₀ Nonattainment Area SIP” (“West Pinal County PM₁₀ Plan”) addresses the CAA nonattainment area requirements for the 1987 PM₁₀ NAAQS, including requirements for an emissions inventory, an attainment demonstration, reasonable further progress, reasonably available control measures, contingency measures, and motor vehicle emissions budgets. The EPA is proposing to approve the base year 2008 emissions inventory for direct PM₁₀ and to disapprove the remaining elements of the West Pinal County PM₁₀ Plan.

DATES: Written comments must arrive on or before [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*].

ADDRESSES: Submit your comments, identified by Docket ID No. EPA-R09-OAR-2020-0618 at <https://www.regulations.gov>. For comments submitted at Regulations.gov, follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from Regulations.gov. The EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information

(CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (i.e., on the web, cloud, or other file sharing system). For additional submission methods, or if you need assistance in a language other than English or if you are a person with disabilities who needs a reasonable accommodation at no cost to you, please contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section. For the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <https://www.epa.gov/dockets/commenting-epa-dockets>. If you need assistance in a language other than English or if you are a person with disabilities who needs a reasonable accommodation at no cost to you, please contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section.

FOR FURTHER INFORMATION CONTACT: Jerry Wamsley, Air Planning Office (ARD-2), EPA Region IX, 75 Hawthorne Street, San Francisco, CA 94105, (415) 947-4111, or by email at wamsley.jerry@epa.gov.

SUPPLEMENTARY INFORMATION: Throughout this document, “we,” “us,” and “our” refer to the EPA.

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I. Regulatory Context

A. *PM₁₀ Standard, Area Designations, and SIPs*

The EPA sets the National Ambient Air Quality Standard (NAAQS) for certain ambient air pollutants at levels required to protect human health and the environment. Particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers, or PM₁₀, is one of these ambient air pollutants for which the EPA has established health-based standards. On July 1, 1987, the EPA promulgated two primary standards for PM₁₀: A 24-hour standard of 150 micrograms per cubic meter (µg/m³); and an annual PM₁₀ standard of 50 µg/m³. The EPA also promulgated secondary PM₁₀ standards that were identical to the primary standards.¹ Because they are identical, we refer to the primary and secondary standards using the singular term, NAAQS. Effective December 18, 2006, EPA revoked the annual PM₁₀ NAAQS but retained the 24-hour PM₁₀ NAAQS.²

An area attains the 24-hour PM₁₀ NAAQS when the expected number of days per calendar year with a 24-hour concentration in excess of 150 micrograms per cubic meter (µg/m³) (referred to herein as an “exceedance”), is equal to or less than one as determined in accordance with 40 CFR part 50, appendix K.³ Conversely, a violation of the PM₁₀ NAAQS occurs when the number of expected annual exceedances of the 24-hour NAAQS is greater than one.

Most of Pinal County, Arizona, including what is now the West Pinal County PM₁₀ nonattainment area, was included in the “rest of state” area, which was designated “unclassifiable” for the 24-hour PM₁₀ NAAQS by operation of law upon enactment of the CAA, consistent with section 107(d)(4)(B)(iii). Until recently, this area in Arizona remained designated “unclassifiable” for the 1987 24-hour PM₁₀ NAAQS. The CAA, under section 107(d)(3),

¹ 52 FR 24634 (July 1, 1987).

² 71 FR 61144 (October 17, 2006).

³ See 40 CFR 50.6 and 40 CFR part 50, appendix K.

authorizes the EPA to revise the designation of, or “redesignate,” areas (or portions thereof) based on air quality data, planning and control considerations, or any other air-quality-related considerations that the EPA deems appropriate.

On October 14, 2009, under CAA section 107(d)(3)(A), the EPA notified the Governor of Arizona and four tribal leaders (whose areas of Indian country are located entirely, or in part, within Pinal County) that the designation for Pinal County, and any nearby areas that may be contributing to the monitored violations in Pinal County, should be revised.⁴ Our decision to initiate the redesignation process was due to ambient data for 2006-2008 from PM₁₀ monitoring sites within the County showing widespread, frequent, and in some instances, severe, violations of the PM₁₀ standard.

Effective July 2, 2012, the EPA designated a portion of state lands in Pinal County, Arizona (“West Pinal County”) as nonattainment for the 1987 PM₁₀ NAAQS based on monitoring data from 2006-2008.⁵ West Pinal County is located in central Arizona, southeast of the Phoenix metropolitan area and northwest of the city of Tucson. Pinal County covers 5,365 square miles and has two distinct western and eastern regions with different characteristics relevant to pollution formation. The West Pinal County PM₁₀ nonattainment area is located within the western region, characterized by low desert valleys and an arid climate. The eastern region is mountainous, with elevations up to 6,441 feet.

As a result of the nonattainment designation, EPA classified West Pinal County as a “Moderate” PM₁₀ nonattainment area. Consequently, by January 2, 2014, Arizona was required to submit a nonattainment plan SIP revision for the 24-hour PM₁₀ NAAQS meeting relevant CAA requirements. The State submitted a SIP revision intended to meet these requirements on December 21, 2015, and this “2015 West Pinal Moderate PM₁₀ Nonattainment Area SIP” is the

⁴ Letter from Laura Yoshii, Acting Regional Administrator to Governor Jan Brewer dated October 14, 2009. The EPA notified the tribal leaders of the Ak-Chin Indian Community, Gila River Indian Community, San Carlos Apache Tribe by letters dated December 30, 2009, and Tohono O’odham Nation by letter dated September 21, 2010.

⁵ 77 FR 32024 (May 31, 2012). The precise boundaries for the West Pinal County nonattainment area are described in 40 CFR 81.303.

subject of this proposed action. For a PM₁₀ nonattainment area classified as Moderate, section 188(c) of the CAA provides that the Moderate area attainment date is “as expeditiously as practicable, but no later than the end of the sixth calendar year after the area's designation as nonattainment.” Consequently, the applicable attainment date for the West Pinal County area, designated nonattainment in 2012, was as expeditiously as practicable, but no later than December 31, 2018.

CAA section 188(b)(2) requires the EPA to determine whether a state has attained the 24-hour PM₁₀ NAAQS in a Moderate PM₁₀ nonattainment area by the applicable attainment date and requires the EPA to make such a determination within six months after that date. If the EPA determines that a Moderate area has not attained the NAAQS by the relevant attainment date, then the area is reclassified as a Serious area by operation of law. On June 24, 2020, the EPA determined that the West Pinal County nonattainment area had not attained the 1987 24-hour PM₁₀ NAAQS by December 31, 2018, the outermost permissible statutory attainment date for the area.⁶ This determination was based on our calculation of the PM₁₀ design value for the West Pinal County nonattainment area over the 2016-2018 period, using complete, quality-assured, and certified PM₁₀ monitoring data.

The basis for the EPA’s June 24, 2020 finding of failure to attain the PM₁₀ NAAQS and the margin by which the area failed to attain indicate that the Moderate plan’s modeled attainment demonstration, which incorrectly predicted attainment of the PM₁₀ NAAQS by December 31, 2018, is not approvable. Because the modeled attainment demonstration is not approvable, as described in section III.D, other elements of the West Pinal County PM₁₀ Plan that are dependent upon the modeled attainment demonstration are likewise not approvable, e.g., the emission controls imposed by the State to meet reasonably available control measure/ reasonably available control technology (RACM/RACT) requirements based on the predicted sufficiency of those controls to result in attainment by the intended attainment date. If finalized

⁶ 85 FR 37756 (June 24, 2020).

as we propose, our disapproval of most elements of the Moderate plan will start sanctions and Federal implementation plan (FIP) clocks, which can be turned off by the EPA's approval of new plan elements for the PM₁₀ NAAQS that correct the deficiencies within the Moderate plan. With the EPA's reclassification of the West Pinal County area to Serious, Arizona now has an obligation to submit, by January 24, 2022, a nonattainment plan SIP revision that complies with the statutory and regulatory requirements for Serious PM₁₀ nonattainment plans and that demonstrates attainment of the PM₁₀ NAAQS as expeditiously as practicable, but no later than December 31, 2022. Although reclassification of an area from Moderate to Serious does not eliminate a state's obligation to meet Moderate area nonattainment plan requirements, the EPA anticipates that Arizona's submission of an approvable Serious area nonattainment plan would also satisfy the State's Moderate area nonattainment plan obligations. For example, an approvable Serious area nonattainment plan would satisfy the Act's requirements for imposing best available control measures, including best available control technology (BACM/BACT), which would presumably satisfy the less stringent requirements for RACM/RACT.

B. CAA and Regulatory Requirements for Moderate PM₁₀ Nonattainment Area SIPs

Along with the new designations, classifications, and attainment dates, the Clean Air Act Amendments of 1990 established new nonattainment area planning requirements. The air quality planning requirements for Moderate PM₁₀ nonattainment areas are set out in subparts 1 and 4 of the CAA, including sections 110, 172, and 189 of the statute. We discuss these sections of the Act in more detail later during our review of each plan element. Also, the EPA has issued guidance, in a document we refer to as the General Preamble, describing how we will review state nonattainment plan SIP submissions under Title I of the CAA, including such SIP submissions for Moderate PM₁₀ nonattainment areas.⁷ In general, states must include the following elements in nonattainment plans for Moderate areas for purposes of the 1987 24-hour PM₁₀ NAAQS: a comprehensive, accurate, and current emissions inventory of emissions sources

⁷ 57 FR 13498 (April 16, 1992) and 57 FR 18070 (April 28, 1992).

in the nonattainment area; provisions to implement RACM/RACT for the appropriate sources and pollutants in the nonattainment area; provisions demonstrating reasonable further progress (RFP), including quantitative milestones towards attainment of the PM₁₀ NAAQS as expeditiously as practicable, along with quantitative milestones for evaluation of RFP at set times; contingency measures that will provide for additional emissions reductions automatically in the event that the state fails to meet RFP or to attain the NAAQS by the applicable attainment date in the area; and, a motor vehicle emissions budget for the purpose of determining the conformity of transportation programs and plans developed by state transportation agencies.

II. Submissions from the State of Arizona to Address the 1987 PM₁₀ Standard

Requirements in the West Pinal County Nonattainment Area

A. Summary of State Submissions

As a result of the May 31, 2012 nonattainment designation, West Pinal County was classified as a Moderate PM₁₀ nonattainment area. Within 18 months from the July 2, 2012 effective date of the designation, or January 2, 2014, the State was required to submit a nonattainment plan meeting Moderate area plan requirements, including emission control measures for West Pinal County designed to attain the 1987 24-hour PM₁₀ NAAQS as expeditiously as practicable, but no later than December 31, 2018.

On December 21, 2015, Arizona submitted the West Pinal County PM₁₀ Plan, intended to address the Moderate area nonattainment requirements, to the EPA as a revision to the Arizona SIP.⁸ The West Pinal County PM₁₀ Plan is organized into seven chapters and nine appendices. The nine appendices provide support for the plan and are divided into the following categories: technical support and documentation (appendices A-D, F), SIP adoption authority and public notice and hearing documentation (appendix E) and control measure submittals (appendices G-I).

⁸ Letter dated December 21, 2015, from Eric C. Massey, Director, Air Quality Division, Arizona Department of Environmental Quality, to Jared Blumenfeld, Regional Administrator, EPA Region IX.

Appendices G, H, and I contain control measures submitted with the West Pinal County PM₁₀ Plan in the form of rules, statutes, and other supporting documents. We are not proposing to act on the submitted control measures in this proposed action on the West Pinal County PM₁₀ Plan. Previously, the EPA approved into the Arizona SIP the submitted control measures that regulate fugitive dust, construction dust, and crop operations.⁹ In a separate *Federal Register* notice, we intend to take action on the remainder of the State's submitted rules, namely, an update to its agricultural best management practices (AgBMP) statute, and the AgBMP rules for animal operations in Pinal County.

B. CAA Procedural Requirements for Adoption and Submission of SIP Revisions

CAA sections 110(a) and 110(l) require a state to provide reasonable public notice and opportunity for public hearing prior to the adoption and submission of a SIP revision to the EPA for evaluation under section 110(k) and other applicable substantive requirements. To meet this procedural requirement, a state must include evidence that it provided adequate public notice and an opportunity for a public hearing, consistent with the EPA's implementing regulations in 40 CFR 51.102.

The Arizona Department of Environmental Quality (ADEQ) provided public notice and opportunity for public comment on the West Pinal County PM₁₀ Plan. On October 19, 2015, ADEQ released the West Pinal County PM₁₀ Plan for public review and published a notice of public meeting to be held on November 19, 2015, to consider adoption of the West Pinal County PM₁₀ Plan.¹⁰ On November 19, 2015, ADEQ held the public hearing and subsequently adopted the West Pinal County PM₁₀ Plan as a revision to the Arizona SIP.¹¹ Under authority provided by

⁹ 82 FR 20267 (May 1, 2017).

¹⁰ "Arizona Department of Environmental Quality and Public Comment Period and Hearing on the Proposed Arizona State Implementation Plan Revision, Attainment Plan for the West Pinal County PM₁₀ Planning Area (1987 NAAQS)" published in the Arizona Republic October 19 and 20, 2015; Exhibit E-III, Appendix E, West Pinal County PM₁₀ Plan.

¹¹ "Public Hearing Presiding Officer Certification" signed by Naveen Savarirvayan, Presiding Officer, November 19, 2015 and notarized; Exhibit E-VI, Appendix E, West Pinal County PM₁₀ Plan. The hearing transcript and the public comments and State responses are found at Exhibit E-VIII and Exhibit E-VII, respectively, within Appendix E, West Pinal County PM₁₀ Plan.

Arizona state law, on December 21, 2015, Eric Massey, Director of the Air Quality Division, ADEQ, submitted the West Pinal County PM₁₀ Plan to the EPA.¹² On June 21, 2016, the West Pinal County PM₁₀ Plan became complete by operation of law.¹³

Based on information provided in the SIP submissions summarized above, the EPA has determined that the public hearing was properly noticed. Therefore, we find that the submittal of the West Pinal County PM₁₀ Plan meets the procedural requirements for public notice and hearing in CAA sections 110(a) and 110(l) and 40 CFR 51.102.

III. Evaluation of the West Pinal County PM₁₀ Plan

A. Emissions Inventories

1. Statutory and Regulatory Requirements

CAA section 172(c)(3) requires a state to submit for each PM₁₀ nonattainment area a “base year inventory” that is a comprehensive, accurate, current inventory of actual emissions from all sources of the relevant pollutant or pollutants in the area. Also, the state should submit a second projected “attainment year inventory” for the year in which the state projects that the area will attain the PM₁₀ standards. The state should include documentation explaining how it calculated the emissions data. When estimating mobile source emissions, states should use the latest emissions models and planning assumptions available at the time the SIP is developed.¹⁴

The state must meet several general requirements for base year emissions inventories, consistent with CAA section 172(c)(3). First, the emissions inventory year must be one of the 3 years used for the EPA PM₁₀ nonattainment designation for the area, or an alternative year agreed upon by the EPA and the state as more reflective of the causes and sources of violations of the PM₁₀ standard that meet the criteria in CAA section 172(c)(3). Second, the state must reflect actual emissions from all sources of PM₁₀ in the inventory. Third, the state should report

¹² Letter dated December 21, 2015 from Eric C. Massey, Director, Air Quality Division, ADEQ to Jared Blumenfeld, Regional Administrator, EPA Region IX.

¹³ 42 U.S.C. 7410(k)(1)(B).

¹⁴ See 81 FR 58032 (August 24, 2016).

the emissions inventory in the form of the PM₁₀ standard it is intended to address, e.g., in tons or pounds per day to be consistent with the averaging period of the 24-hour PM₁₀ NAAQS.¹⁵

A state must meet similar CAA section 172(c)(3) requirements in the projected attainment year inventory for the most expeditious year in which the state can show attainment of the PM₁₀ standard in the modeled attainment demonstration portion of the nonattainment plan. At a minimum, the state must choose an attainment year consistent with the outermost applicable deadline required by CAA section 188(c). As with the baseline year inventory, the state must reflect emissions from all sources of PM₁₀ in this inventory and report them in the form of the PM₁₀ standard. In addition, the attainment year inventory must be consistent with the source categories and level of detail reported by the state in the base year inventory.

Future attainment year and related baseline emissions inventories must reflect the most recent population, employment, travel and congestion estimates for the area. In this context, “baseline” emissions inventories refer to emissions estimates for a given year and area that reflect rules and regulations and other measures that are already adopted in a state’s EPA approved SIP and assumed within the attainment demonstration. Future baseline emissions inventories are necessary to show the projected effectiveness of SIP control measures designed to result in attainment by the applicable attainment year. Both the base year and future year, baseline and attainment inventories are necessary inputs to any modeling or other analyses required to demonstrate attainment of the PM₁₀ standard, as required by section 189(a)(1)(B).

2. Summary of State’s Submission

The West Pinal County PM₁₀ Plan includes a base year (2008) inventory, and future year (2018) baseline and attainment emissions inventories for direct PM₁₀ in the West Pinal County area. The State provided documentation for the emissions inventories in Chapter 5 (“Annual Emissions Inventory”) of the West Pinal County PM₁₀ Plan and its two-part Appendix B (“Pinal County PM₁₀ Nonattainment Area Emissions Inventories for 2008 and 2018 Base Years and

¹⁵ See 81 FR 58027-58032.

Design Days”, and its supporting “Exhibits”).¹⁶ The emissions inventories are provided in two parts, one representing windblown PM₁₀ emissions on high-wind days (including both entrained dust and windblown dust from human activities), and the second representing PM₁₀ emissions on low-wind days (including dust due to human activity that stagnates near its point of origin). The State presents the annual emissions inventories on a tons per year basis that it later converts to a tons or pounds per day basis for use within the attainment demonstration modeling for the 24-hour NAAQS at issue.

The 2018 attainment year emissions inventories reflect State of Arizona and Pinal County rules adopted concurrently with the West Pinal County PM₁₀ Plan in late 2015.¹⁷ The Plan’s emissions reductions are based on continuing implementation of existing Federal controls along with new state and local control measures submitted with the Plan. The 2008 base year and projected 2018 baseline and attainment year inventories use the most recent EPA-approved mobile source emissions model at the time the plan was developed, MOVES2014, for estimating on-road motor vehicle emissions.¹⁸ Future emissions forecasts in the West Pinal County PM₁₀ Plan, particularly on-road mobile source emissions, are based primarily on demographic and economic growth projections provided by Arizona Department of Administration and the Maricopa Association of Governments (MAG).¹⁹

In general, the term “point sources” typically refers to permitted facilities that have one or more identified and fixed pieces of equipment and emissions points. “Area sources” typically consist of widespread and numerous smaller emissions sources, such as small permitted facilities and households. The “mobile sources” category refers to vehicles and is typically divided into two major subcategories, “on-road” and “non-road” mobile sources. On-road mobile sources include light-duty automobiles, light-, medium-, and heavy-duty trucks, and motorcycles. In

¹⁶ As needed, we will refer to the primary document as “Appendix B” and the secondary document as “Appendix B-Exhibits.”

¹⁷ Please refer to Appendices G, H, and I, West Pinal County PM₁₀ Plan for rule adoption information.

¹⁸ Appendix B, 62.

¹⁹ West Pinal County PM₁₀ Plan, 27-28, Table 3-3; Appendix B, 120, 132, and 132 at footnote 97.

addition to tailpipe, brake, and tire wear, on-road mobile emissions estimates for PM₁₀ also include re-entrained dust from vehicles driven on paved and unpaved roads. Non-road mobile sources include aircraft and related support vehicles, locomotives, construction equipment, agricultural equipment, mobile equipment, and recreational vehicles.

In the West Pinal County PM₁₀ Plan, the State based the point source emissions for the 2008 base year emissions inventory on reported data from facilities using the permit file reporting programs of the Pinal County Air Quality Control District (PACQCD). Area sources, as noted above, include smaller emissions sources distributed across the nonattainment area. ADEQ estimated emissions for area sources using established inventory methods, including publicly available emissions factors and activity information. The State derived activity data from national survey data, such as the Energy Information Administration or from local sources and PACQCD databases. Emissions factors used for the estimates come from many sources, such as facility and equipment source tests, compliance reports, and the EPA's compilation of emissions factors document known as "AP-42."

ADEQ calculated the 2008 base year on-road emissions inventories in the West Pinal PM₁₀ Plan using the MOVES2014 model and a back-casting of 2015 modeling of vehicle travel activity data provided by MAG.²⁰ ADEQ estimated emissions inventories for non-road equipment using the EPA's NONROAD Model, including construction and mining equipment, industrial and commercial equipment, lawn and garden equipment, agricultural equipment, and recreational vehicles.²¹ Locomotive emissions were estimated from EPA published emission factors and local track-mileage, train speed, and throughput data.²² The State developed aircraft and related ground support vehicle emissions estimates in conjunction with activity data from local airports in the region.

²⁰ Appendix B, 62-75.

²¹ Appendix B, 87-90. EPA NONROAD Model, Version 2008a, released July 2009.

²² Appendix B, 96.

As described previously, the State grouped direct PM₁₀ emissions estimates in the West Pinal County PM₁₀ Plan into two general categories and emissions inventories, windblown dust and human activity-based emissions;²³ we present these inventories in Tables 1 and 2, respectively. In general, emission inventories can be broken into four basic categories: stationary sources, area sources, non-road sources and mobile sources. Instead of a summary emissions inventory consisting of these four general categories, ADEQ provided a more detailed 2008 base year emissions inventory. In some cases, a source category will appear in both emissions inventories and tables. For example, an unpaved road and an agricultural field will emit PM₁₀ when wind speeds become high enough to pick up and carry disturbed earth, as well as due to vehicle and equipment traffic on the unpaved road or agricultural activity in a field, such as harvesting or tilling.

Table 1. West Pinal County PM₁₀ Plan, Windblown Dust/Fugitive Emissions Inventory (tons per year).	
Source Category	2008 Base Year
Developed Urban Lands	200.7
Developed Rural Lands	1,959.7
Unpaved Roads	4,688.6
Cleared Areas	398.1
Residential Construction	1,302.4
Dairies	449.6
CAFOs	273.7
Desert Shrubland	38,276.7
Agriculture	19,510.1
Commercial Construction	686.4
Other	4,243.9
Site Development	858.7
Total	72,848.6

Source: West Pinal County PM₁₀ Plan, Table 5-3; Appendix B, Tables 5-31, 5-33.

Table 2 presents ADEQ's direct PM₁₀ emissions inventory related to human activity. Stationary sources are broken out into permitted sources and fuel combustion. Area sources are

²³ Tables 5-1, 5-2, and 5-3, West Pinal County PM₁₀ Plan.

disaggregated into several source categories: fires, open burning, unpaved parking, and construction sites and activities. Agricultural sources are also disaggregated into several source categories: on field harvesting, on field tilling, confined animal feed operations (CAFOs), and dairies. In contrast, mobile sources are included within the “unpaved roads” and “paved roads” source categories. Each of these two source categories aggregate direct (vehicle exhaust, tire and brake wear) and fugitive PM₁₀ emissions from motor vehicles on unpaved and paved roads. Finally, nonroad equipment and railroad emissions are assigned to their own respective source categories.

Table 2. West Pinal County PM₁₀ Plan, Human Activity-Based Emissions Inventory (tons per year).	
Source Category	2008 Base Year
Ag Fields – Harvesting	312.9
Ag Fields – Tilling	2,540.3
CAFOs	2,614.3
Paved Road *	1,180.7
Unpaved Road – All Road Types*	45,127.8
Fuel Combustion	28.3
Fires	19.9
Open Burning	13.6
Nonroad	121.3
Railroad	85.9
Construction	12,955.3
Dairy	186.6
Permitted Sources	781.3
Unpaved Parking	251.5
Total	66,219.7

Source: West Pinal County PM₁₀ Plan, Table 5-3; Appendix B, Tables 5-31, 5-33.

*Paved and Unpaved Road emissions estimates include direct vehicle emissions and fugitive dust emissions from vehicle re-entrainment.

Tables 1 and 2 provide a summary of the West Pinal County 2008 base year direct PM₁₀ emissions in tons per year. Appendix B, Chapters 3 and 5 also provide source category estimates in a pounds per day format consistent with the 24-hour PM₁₀ NAAQS. Where appropriate, within the attainment demonstration, ADEQ used these daily estimates or developed more focused daily

emissions estimates to provide the basis for the control measure analysis and the modeled attainment demonstrations in the West Pinal County PM₁₀ Plan.²⁴ Within the windblown PM₁₀ emissions inventory, the largest source after desert shrubland is agricultural emissions. Within the human activity-based emissions inventory, the largest source is unpaved roads, followed by construction fugitive emissions.

3. The EPA's Review of the State's Submission

We have reviewed the 2008 base year emissions inventory for direct PM₁₀ in the West Pinal County PM₁₀ Plan and emissions inventory estimation methodologies used by ADEQ for consistency with CAA requirements and EPA guidance. We address the State's analysis for PM₁₀ precursors in Section III.B.

First, we find that although the 2008 base year inventory reports annual PM₁₀ emissions estimates, the Plan also provides and uses daily emissions estimates within the attainment demonstration modeling and the related modeling domain micro-emissions inventories; therefore, the Plan is consistent with the requirement that ADEQ must use an emissions inventory in a form consistent with the 24-hour PM₁₀ standard.²⁵ ADEQ has provided adequate documentation explaining how it calculated the 2008 base year emissions estimates, both as annual and daily inventories.²⁶

Second, we find that the 2008 base year emissions inventory in the West Pinal County PM₁₀ Plan used emissions models, emission factors, and methodologies for estimating PM₁₀ emissions that were accurate and appropriate to the time that the Plan was written. Also, the 2008 base year inventory for direct PM₁₀ is comprehensive in scope and coverage. Therefore, the submitted emissions inventory represents a comprehensive, accurate, and current inventory of actual emissions of direct PM₁₀ during that year in the West Pinal County Area.

²⁴ Appendix B, chapters 3 and 5.

²⁵ As discussed in Section III.G Motor Vehicle Emissions Budgets and Transportation Conformity, an annual emissions inventory introduces difficulties with determining and presenting a motor vehicle emissions budget.

²⁶ Chapter 5 and Appendix B of the West Pinal County PM₁₀ Plan.

Third, we find that ADEQ's selection of 2008 for the base year emissions inventory is appropriate because it is chosen from one of the three years, 2006-2008, in which the area was designated nonattainment. The 2008 emissions inventory is representative of the sources of direct PM₁₀ pollution contributing to exceedances of the PM₁₀ NAAQS that caused the area to be designated nonattainment. Consequently, the EPA is proposing to approve the 2008 base year emissions inventory for direct PM₁₀ in the West Pinal County PM₁₀ Plan as meeting the requirements for a base year inventory set forth in CAA section 172(c)(3).

B. PM₁₀ Precursors

1. Statutory and Regulatory Requirements

Section 189(e) of the Act requires that the control requirements for major stationary sources of direct PM₁₀ also apply to major stationary sources of PM₁₀ precursors, except where the Administrator determines that such sources do not contribute significantly to PM₁₀ levels that exceed the standard in the area. While CAA section 189(e) expressly requires control of precursors from major stationary sources, subpart 4 and other CAA provisions collectively require the control of direct PM₁₀ and PM₁₀ precursors from all types of sources (i.e., stationary sources, area sources and mobile sources) as may be needed for the purposes of demonstrating attainment as expeditiously as practicable in a given nonattainment area.²⁷

The provisions of subpart 4 of part D, title I of the CAA do not define the term "precursor" for purposes of PM₁₀, nor do they explicitly require the control of any specific PM precursor. The statutory definition of "air pollutant" in CAA section 302(g), however, provides that the term "includes any precursors to the formation of any air pollutant, to the extent the Administrator has identified such precursor or precursors for the particular purpose for which the term 'air pollutant' is used." EPA has identified sulfur dioxide (SO₂), oxides of nitrogen (NO_x),

²⁷ See CAA requirements for states to demonstrate attainment "as expeditiously as practicable," CAA section 188(c)(1) and section 172(a)(1).

volatile organic compounds (VOC), and ammonia (NH₃) as precursors to the formation of PM.²⁸ Accordingly, a state must include emissions of direct PM emissions and these four precursors in emissions inventories and must control emissions from sources of all of these pollutants, unless the state demonstrates to EPA's satisfaction that control of one or more of these pollutants is not needed for expeditions attainment of the NAAQS in the nonattainment area at issue.

2. Summary of the State's Submission

Appendix B, Exhibit BXVI contains ADEQ's demonstration that emissions of SO₂, NO_x, and NH₃ from existing sources in the West Pinal County nonattainment area do not contribute significantly to PM₁₀ levels that exceed the NAAQS. For this analysis, ADEQ estimated the impact of these three PM₁₀ precursors on PM₁₀ concentrations at two sites, Cowtown (CWT) and Pinal County Housing (PCH), using "worst impact day monitored data" from a year-long chemical mass balance characterization (CMBC) study (Desert Southwest Coarse Particulate Matter Study) and emissions data from the 2008 National Emission Inventory (NEI).²⁹ ADEQ evaluated these data to determine which, if any, source categories had precursor emissions that contribute more than 5 micrograms per cubic meter (µg/m³) on specific design days.³⁰

Appendix B, Exhibit BXVI, Table BXVI-1 provides the maximum particle mass concentration and chemical composition (i.e., crustal, organic material, nitrate, sulfate, ammonium, other species, and unidentified particle fractions) measured during the CMBC study for CWT and PCH. ADEQ then calculated the percentage of each chemical constituent to the summed total of the chemical constituent parts. ADEQ assumed the design days for each monitor had the same relative chemical composition as the "worst impact day" identified in the CMBC

²⁸ See 81 FR 58010, 58018.

²⁹ Clements, A. L., Fraser, M. P., Upadhyay, N., Herckes, P., Sundblom, M., Lantz, J., and Solomon, P. A., "Chemical characterization of coarse particulate matter in the Desert Southwest – Pinal County Arizona, USA", *Atmospheric Pollution Research*, 5 (2014) 52–61.

³⁰ ADEQ focused their attainment demonstration on a set of "design days" and monitors that have experienced, or are conducive to, the highest concentrations. See EPA TSD, p. 11. Two design days were examined in ADEQ's PM₁₀ precursor demonstration.

study. The State calculated design day concentrations for each chemical constituent by multiplying the study-derived percentages by a design day concentration for CWT (244.5 $\mu\text{g}/\text{m}^3$) and PCH (178.0 $\mu\text{g}/\text{m}^3$). The CMBC study estimated that summed nitrate, sulfate, and ammonium impacts on the CWT and PCH monitors were 3.4 percent and 4.0 percent, respectively. These percentages suggest that 8.4 $\mu\text{g}/\text{m}^3$ and 7.2 $\mu\text{g}/\text{m}^3$ of the design day ambient PM_{10} concentrations at the CWT and PCH monitors resulted from emissions of the three PM_{10} precursors examined.

Next, ADEQ processed Pinal County 2008 EPA NEI reported emissions for NO_x , SO_2 , and NH_3 to determine the percent contribution of each source sector to the total emissions of these pollutants for the county.³¹ ADEQ apportioned the precursor concentrations derived above to individual source sectors based on the relative contribution of each sector to the annual emission inventory. Based on this analysis, no precursor emissions from any source category exceeded the 5 $\mu\text{g}/\text{m}^3$ threshold.³² The largest contributing source category was “On-road Mobile,” contributing less than 3.5 $\mu\text{g}/\text{m}^3$ of PM_{10} from precursor emissions to either monitor on the design days.

3. The EPA’s Review of the State’s Submission

We identified several issues with the analysis that ADEQ presented. First, SO_2 , NO_x , VOC, and ammonia are precursors to the formation of PM_{10} . ADEQ does not address VOC emissions in its analysis; therefore, we cannot evaluate whether sources of VOC emissions contribute significantly to PM_{10} levels that exceed the NAAQS in the West Pinal County PM_{10} nonattainment area.

Second, it is unclear whether the chemical composition values presented in Appendix B, Exhibit BXVI, Table BXVI-1 reflect one maximum day sample, or the maximum chemical

³¹ Appendix B, Exhibit BXVI, Table BXVI-2.

³² Appendix B, Exhibit BXVI, Table BXVI-3.

composition measured for each individual component during the entire CMBC study. If the latter approach was used, then the resulting percentages would not reflect percentages measured on any actual exceedance day and could overrepresent or underrepresent the various chemicals when compared to actual exceedance days. If the chemical composition values represent one maximum day sample, then: (a) the individual components listed in Table BXVI-1 when totaled together should equal that day's total mass, which they do not; and (b) this would only represent a single day - therefore, a single type of exceedance day. ADEQ modeled two meteorological scenarios causing exceedances, high wind conditions and stagnant or low wind conditions. The emission sources affecting the PM₁₀ composition would vary between these two scenarios, making use of a single maximum value at each site for each chemical component likely insufficient. Therefore, ADEQ's approach of assuming the chemical composition of the two design days match those reported in the study likely does not address all conditions affecting nonattainment for the area.

Third, ADEQ applied the 5 µg/m³ threshold from the Serious PM₁₀ nonattainment area addendum to the General Preamble.³³ The Serious area addendum states that, for purposes of evaluating best available control measures (BACM), a source category will be presumed to contribute significantly to a violation of the NAAQS if its PM₁₀ impact at the location of the expected violation would exceed 5 µg/m³. This guidance is not precursor guidance and was intended to apply to the total impact of a source category (including direct PM and precursor emissions). It is not clear from the State's submission why the application of this threshold to the impact of precursor emissions from individual source categories is an appropriate method of evaluating the significance of PM₁₀ precursor emissions for the West Pinal County PM₁₀ nonattainment area.³⁴

³³ Appendix B, Exhibit BXVI, BXVI-2. See 59 FR at 42011.

³⁴ For more recent guidance on precursor significance, see Memorandum from Scott Mathias, Acting Director, Air Quality Policy Division and Richard Wayland, Director, Air Quality Assessment Division, "Fine Particulate Matter (PM_{2.5}) Precursor Demonstration Guidance" (May 30, 2019).

Finally, ADEQ used an annual inventory to partition the source category contribution to PM₁₀. High wind affected days would likely have a different composition of sources than what would be reflected in an annual inventory, potentially by a substantial margin. ADEQ did not address this issue, and used the annual inventory composition to represent all exceedance days.

The State has not adequately shown that PM₁₀ precursors do not contribute significantly to concentrations above the NAAQS in the West Pinal County PM₁₀ nonattainment area. As described elsewhere in this notice, due to the deficiencies with the State's precursor analysis, the State has not shown that it was unnecessary to regulate emissions of precursors in its RACM and modeled attainment demonstration. As explained in Section III.C., the State has only evaluated sources of direct PM emissions within the West Pinal County PM₁₀ Plan. The EPA anticipates that ADEQ could develop an improved precursor analysis for the area, and this analysis may ultimately confirm that it is not necessary to regulate one or all of the PM₁₀ precursors; however, we find that the precursor analysis submitted with the Plan does not provide a sufficient basis for that conclusion.

In conclusion, because of the omissions and uncertainties in ADEQ's PM₁₀ precursor analysis, we are unable to determine whether precursor emissions contribute significantly to PM₁₀ levels that exceed the NAAQS in the West Pinal County nonattainment area. Consequently, we are proposing to disapprove the precursor demonstration in the West Pinal County PM₁₀ Plan because the demonstration is inadequate to show that emissions reductions from all PM₁₀ precursors do not contribute significantly to PM₁₀ levels exceeding the NAAQS, as required by CAA Section 189(e). As explained in section III.C, the deficiencies in the State's precursor analysis mean that the State failed to establish in its RACM/RACT analysis that it was unnecessary to regulate PM₁₀ precursor emissions.

C. Reasonably Available Control Measures Demonstration

1. Statutory and Regulatory Requirements

CAA section 172(c)(1) requires that each attainment plan provide for the implementation of all RACM/RACT as expeditiously as practicable (including such reductions in emissions from sources in the area through implementation of reasonably available control technology) and for attainment of the NAAQS. Consistent with section 189(a)(1)(C), each state with a Moderate PM₁₀ nonattainment area is required to submit provisions to assure implementation of reasonably available control measures no later than 4 years after the date of designation of the area. Taken together, these CAA provisions require that Moderate area attainment plans must provide for the implementation of RACM and RACT in the nonattainment area as expeditiously as practicable but no later than 4 years after designation.

Section 189(a)(1)(B) of the CAA requires states to demonstrate attainment of the PM₁₀ standard by the applicable attainment date (or demonstrate that attainment by such date is impracticable) and Section 188(c)(1) requires that the attainment date for a Moderate area shall be as expeditiously as practicable, but no later than the end of the sixth calendar year after the year of the nonattainment area's designation.

To address this requirement to adopt all RACM/RACT and meet the PM₁₀ NAAQS as expeditiously as practicable, states should consider all potentially reasonable control measures for source categories in the nonattainment area to determine whether they are reasonably available for implementation in that area and whether they would, if implemented individually or collectively, advance the area's applicable attainment date by one year or more.³⁵ Any measures that are necessary to meet these requirements that are not either federally promulgated, or part of the state's SIP, must be submitted in enforceable form as part of the state's nonattainment plan SIP submission for the area.

The EPA has provided guidance interpreting the RACM requirement in the General Preamble for the Implementation of the Clean Air Act Amendments of 1990 ("General Preamble"). This guidance includes the following elements and concepts: a recommended list of

³⁵ 44 FR 20372 (April 4, 1979) and 57 FR 13498 (April 16, 1992).

potential PM₁₀ measures for states to consider;³⁶ an emphasis on a state's evaluation of the technological and economic feasibility of potential control measures to determine if such measures are reasonably available for implementation in a given nonattainment area; an expectation that the state will provide a reasoned explanation for a decision not to adopt a given control measure, including a review of any control measures recommended to the state during public comment or public hearing; and, a discussion that in some cases partial implementation of an emissions reduction program may be considered RACM when full implementation would be infeasible within the given Moderate area timeframe.³⁷

2. Summary of the State's Submission

For the West Pinal County PM₁₀ Plan, ADEQ worked through a process to identify and evaluate potential RACM/RACT that could contribute to expeditious attainment of the PM₁₀ NAAQS in the West Pinal County nonattainment area. Chapter 6 of the West Pinal County PM₁₀ Plan provides an overview and description of the Plan's constituent control measures. ADEQ's RACM/RACT analysis for the PM₁₀ standard is described in Appendix F – RACM Analysis for the West Pinal County PM₁₀ Nonattainment Area ("Appendix F"). Appendix F contains summary analyses of potential control measures for emissions reduction opportunities, as well as the economic and technological feasibility and comparability with control requirements in other states and localities.

As a first step in the RACM/RACT analysis, ADEQ prepared a detailed inventory of direct PM₁₀ emissions sources to identify source categories from which emissions reductions would contribute to attaining the PM₁₀ standard.³⁸ In this analysis, ADEQ identified point sources, unpaved roads and agriculture on tribal land, dairy operations, nonroad vehicles, residential fuel combustion, and open burning as insignificant sources of emissions in the area.³⁹

³⁶ 57 FR 18070.

³⁷ 57 FR 13540, 13541.

³⁸ Appendix F, Chapters 2 and 3.

³⁹ Appendix F, 4-12.

Then, ADEQ identified agricultural operations, confined animal feeding operations, fugitive dust from cleared area and unpaved parking lots, construction fugitive dust, and re-entrained dust from paved and unpaved roads as significant sources in the nonattainment area and determined a list of available control measures. ADEQ determined that a source category was significant if those sources contributed more than $5 \mu\text{g}/\text{m}^3$ on a 24-hour basis on a given design day. Conversely, ADEQ determined that source categories contributing less than the $5 \mu\text{g}/\text{m}^3$ threshold were insignificant; furthermore, ADEQ determined these insignificant sources would not advance attainment of the NAAQS, given their small collective contribution to nonattainment.⁴⁰ Finally, ADEQ evaluated the efficacy, cost, and technical feasibility of these identified control measures within the nonattainment area.⁴¹ As part of this review, ADEQ also compared the control requirements of its proposed rules with those requirements in other PM_{10} nonattainment areas or similar state and local provisions.⁴² ADEQ did not identify sources or analyze potential RACM/RACT for PM_{10} precursors because it concluded that such precursors did not contribute significantly to a violation of the NAAQS.

With this process, ADEQ attempted to evaluate and analyze the universe of potential RACM/RACT level controls for sources of direct PM_{10} emissions and identify the subset of control measures that were available to include within the West Pinal County PM_{10} Plan. ADEQ identified a set of control measures that it determined would be sufficient to enable the area to attain by December 31, 2018, and additional controls that it determined were not necessary for attainment or RFP to serve as contingency measures.⁴³ ADEQ based this conclusion on: (1) the practical feasibility of adopting control measures over the latter half of 2015 with the State's desired implementation date of no later than January 1, 2016; and (2) the ability of these control measures to produce immediate emissions reductions and contribute to attainment of the PM_{10}

⁴⁰ Appendix F, Chapter 2 and Table 1.

⁴¹ Appendix F, Chapters 2-4.

⁴² Appendix F, Chapter 4; Exhibit F-I, Available Measures; Exhibit F-II, Construction Comparison; Exhibit F-III, Agricultural Comparison; and, Exhibit F-IV, Fugitive Dust Comparison.

⁴³ West Pinal County PM_{10} Plan, Chapter 7; Table 7-4; Appendix D, Table D5-1.

NAAQS by 2018.⁴⁴ As discussed earlier, the State submitted the following control measures with the West Pinal County PM₁₀ Plan: the AgBMP Rules for Pinal County, the Pinal County Fugitive Dust Rule, and the Pinal County Construction Dust Rule. ADEQ relied only on the following portions of the AgBMP Rules for Pinal County to meet the RACM/RACT requirements and demonstrate attainment of the PM₁₀ standard: AgBMP rule R18-2-610 and -610.03, commercial farms; AgBMP rule R18-2-611 and -611.03, commercial animal operations (except for dairy operations); and R18-2-612 and -612.01, irrigation districts.⁴⁵

ADEQ did not provide a complete or systematic analysis of whether the control measures it did not adopt based on concerns about a lack of immediate emission reduction effect, if taken together, would advance the area's attainment date. Nonetheless, ADEQ did adopt those control measures, implemented them over the 2016-2018 timeframe, and allocated them to serve as contingency measures in the Plan. ADEQ designated the portion of the AgBMP Rules for Pinal County applicable to dairy operations (R18-2-611 and -611.03), along with the Pinal County Fugitive Dust Rule and the Pinal County Construction Dust Rule, as contingency measures because these rules provided additional emissions reductions not relied upon within the Plan's attainment demonstration.⁴⁶

3. The EPA's Review of the State's Submission

As described above, ADEQ evaluated a wide range of potentially available measures for the West Pinal County PM₁₀ Plan. ADEQ identified portions of the AgBMP Rules for Pinal County as RACM/RACT and the State adopted them to provide for attainment of the PM₁₀ standard.⁴⁷ The remaining adopted control measures, some of which were identified as significant sources and potential RACM/RACT, were assigned to provide for contingency measures within the Plan.⁴⁸ In sum, all source categories identified as significant were covered

⁴⁴ Appendix F, 29, 47, 51.

⁴⁵ West Pinal County PM₁₀ Plan, Chapters 6 and 7.

⁴⁶ West Pinal County PM₁₀ Plan, Chapter 6; Chapter 7, Table 7-4.

⁴⁷ West Pinal County PM₁₀ Plan, Chapters 6 and 7.

⁴⁸ West Pinal County PM₁₀ Plan, Chapter 6; Chapter 7, Table 7-4.

by controls either as a control measure for attainment, or as contingency measures, and implemented over the 2016-2018 timeframe. As has been confirmed by subsequent monitoring data, however, these adopted control measures were insufficient to attain the PM₁₀ NAAQS by the applicable attainment date, in part because the State overestimated the effectiveness of the RACM/RACT-designated adopted controls. As an example, ADEQ assumed high and insufficiently conservative compliance rates for agricultural operations that had either no previous experience implementing control measures, or little to no reliable documented compliance history. We review the State's analysis and attainment demonstration in Section III.D and provide detailed discussion in the Technical Support Document (TSD).

The Plan described the adopted control measures and concluded that a subset was reasonable and would achieve the NAAQS by the attainment date; therefore, the State concluded that the RACM/RACT-designated subset of adopted control measures constituted the necessary RACM/RACT for the area.⁴⁹ The State adopted several additional measures beyond the RACM/RACT measures to serve as contingency measures in the Plan. If the RACM/RACT-designated adopted controls actually sufficed to achieve attainment, then these control measures could have constituted sufficient RACM, as additional measures beyond those necessary for attainment need not necessarily be considered as RACM/RACT.⁵⁰ Because the adopted controls designated as RACM/RACT in the West Pinal County PM₁₀ Plan were insufficient, however, to achieve attainment, due in part to overestimates of the control efficiency of these rules, we find that the State terminated its RACM/RACT analysis prematurely. The control measures reserved for contingency measures that the State did not include as RACM/RACT should have been included and justified as RACM. Furthermore, because the State's determination regarding PM₁₀ precursors failed to demonstrate that precursors do not contribute significantly to a violation of

⁴⁹ Appendix F, Chapter 4.

⁵⁰ See 81 FR 58010, 58035. Although such controls should be evaluated to determine if their adoption could advance attainment.

the NAAQS, the State remains obligated to demonstrate that additional PM₁₀ precursor control measures are not required RACM/RACT.

Despite the RACM/RACT-designated rules and contingency measures adopted and implemented by the State, we find that the State failed to adopt RACM/RACT sufficient to achieve the PM₁₀ NAAQS, due in part, to overestimating the control effectiveness of these RACM/RACT control measures. Our conclusion is confirmed by the failure of the Plan's adopted and designated measures to result in attainment of the PM₁₀ NAAQS by the applicable attainment date of December 31, 2018. Because the adopted controls were insufficient to meet the PM₁₀ NAAQS by the attainment date, and the State excluded source categories, including sources of precursors, from its RACM/RACT demonstration without sufficient justification, we propose to disapprove the RACM/RACT demonstration in the West Pinal County PM₁₀ Plan and determine that the Plan does not provide for the implementation of all RACM/RACT as required by CAA section 172(c)(1) and section 189(a)(1)(C).

D. Attainment Demonstration

1. Statutory and Regulatory Requirements

Section 189(a)(1)(B) of the CAA requires that a plan for a Moderate PM₁₀ nonattainment area include a “demonstration (including air quality modeling) that the plan will provide for attainment [of the PM₁₀ NAAQS] by the applicable attainment date.” An attainment demonstration consists of several elements including technical analyses, such as base year and future year modeling, to locate and identify sources of emissions that are contributing to violations of the PM₁₀ NAAQS within the nonattainment area (i.e., analyses related to the emissions inventory for the nonattainment area and the emissions reductions necessary to attain the standard). Section 188(c)(1) of the CAA requires Moderate areas to meet the PM₁₀ standard as expeditiously as practicable, but no later than the sixth calendar year from the area designation.

In addition to reviewing the attainment demonstration modeling and related analyses, we evaluate the Plan's control strategy and the efficacy of the Plan's adopted controls to meet the PM₁₀ NAAQS by the applicable date.

2. Summary of the State's Submission

ADEQ applied a form of proportional roll back and dispersion modeling using a micro-emissions inventory method to model attainment of the PM₁₀ NAAQS. ADEQ modeled two meteorological scenarios causing ambient air values in excess of the 24-hour PM₁₀ NAAQS of 150 µg/m³, high wind conditions and stagnant or low wind conditions, at a representative subset of the monitoring sites in the nonattainment area.⁵¹ Under "stagnation" conditions, wind speeds are typically below 3 mph and particles accumulate in the air without any meteorological reprieve. Under "high wind" conditions, elevated wind speeds (e.g., over 12 mph) generate dust from disturbed soil surfaces, elevating PM₁₀ concentrations. Each selected monitoring site in each modeling scenario had design day specific micro-emissions inventories consistent with the chosen areal modeling domain and application. ADEQ calculated the 2008 Base, 2018 Base, and 2018 Attainment micro-emissions inventories for the given requirements of the modeling application at the respective monitoring site domain and meteorological day scenario.

The State's attainment demonstration approach is described in the Plan within the following documents: Chapter 7, "Attainment Demonstration and Reasonable Further Progress"; Appendix A, "Pinal County PM Inventory Preparation Plan" ("IPP"); Appendix B, "Pinal County PM₁₀ Nonattainment Area Emissions Inventories for 2008 and 2018 Base Years and Design Days" ("Modeling EI"); Appendix C, "Pinal County PM₁₀ Nonattainment Area Source Apportionment Modeling for 2008 and 2018 Base Scenario Design Days" ("Modeling TSD"); and, Appendix D, "Pinal County PM₁₀ Nonattainment Area 2018 Attainment Demonstration and Controlled Emissions Inventories."

⁵¹ West Pinal PM₁₀ Plan County, Section 7.1.

The West Pinal County PM₁₀ Plan discusses the control strategy within Chapter 6 of the Plan and in more detail within Appendix D of the Plan.

a. Modeling

As noted, the West Pinal County PM₁₀ Plan's attainment demonstration considers two specific problems contributing to nonattainment of the PM₁₀ standard in West Pinal County: (1) PM₁₀ emissions from windblown dust and human activity on days with elevated wind speeds; and (2) PM₁₀ emissions from human activity, particularly on days with very low wind or "stagnant" meteorological conditions.

- ADEQ developed a high wind day scenario for Cowtown, Maricopa, Pinal County Housing, and Stanfield monitors and surrounding area micro-emissions inventories. Each monitor has its own two domain micro-emissions inventory for modeling: high wind hours/windblown dust; and, low wind hours/activity-based emissions. The high wind scenario used a proportional rollback approach that accounts for the timing and geographic location of emissions contributing to NAAQS exceedances.⁵²
- ADEQ developed a stagnation day scenario for Cowtown, Pinal County Housing, and Stanfield monitors and surrounding area micro-emissions inventories. The stagnant day scenarios used dispersion modeling from the American Meteorological Society (AMS)/EPA Regulatory Model (AERMOD). ADEQ chose design days from the fall season, September through November 2008 for this analysis.

b. Control Strategy for Attainment

⁵² The term "rollback" refers to the assumption that the PM₁₀ concentrations are directly proportional to emissions. To predict the ambient effect of an emissions change, the concentration can be scaled, or "rolled back," by the same percentage by which emissions are reduced. In "proportional rollback," each source category is rolled back separately, since emissions from each will have a different level of control, and in general a different degree of dispersion. As in simple rollback, the ambient contribution of each individual source category scales with its emissions. For the "weighted proportional rollback," source-to-monitor distance was accounted for via an inverse distance factor (1/d). For example, a source with only small emissions may nevertheless have a large contribution to the concentration if it was very close to the monitor. A change in a source's emissions causes a change in total concentration in proportion to that source's contribution to that particular monitor.

ADEQ relied on the following portions of the AgBMP Rules for Pinal County to provide for attainment of the PM₁₀ standard: R18-2-610 and -610.03, commercial farms; AgBMP rule R18-2-611 and -611.03, commercial animal operations (except for dairy operations); and, R18-2-612 and -612.01, irrigation districts.⁵³ Tables 3 and 4 show the annual nonattainment area emissions inventories for the 2018 baseline estimate and the 2018 attainment estimate by source category and the control strategies' predicted emissions reductions. Within the windblown fugitive dust emissions inventories, ADEQ predicted almost all the emission reductions, 93 percent, to come from soil stabilization control measures on agricultural land. Within the activity-based emissions inventories, ADEQ predicted most of the emission reductions, 87 percent, to come from control measures applied to unpaved road operations on private agricultural land and canal roads; the remainder of predicted emission reductions come from control measures to reduce PM₁₀ emissions from on-field agriculture and animal feeding operations. As noted, the regulatory vehicle for these emissions reductions is the AgBMP rule provisions the State relied on to provide for attainment of the PM₁₀ standard and to implement RACM/RACT in the area.

Table 3. Windblown Dust/Fugitive Emissions, 2018 Base and Attainment Emissions Inventories with Estimated Emission Reductions (tpy)			
Source Category	Base 2018	Attainment 2018	Emission Reductions
Developed Urban Lands	248.1	248.1	---
Developed Rural Lands (low density)	1,959.7	1,959.7	---
Unpaved Roads	4,653.0	3,803.1	849.9
Cleared Areas	457.0	457.0	---
Residential Construction	837.5	837.5	---
Dairies	449.6	449.6	---
CAFOs	155.2	125.3	29.9
Desert Shrubland	---	---	---
Agriculture	19,510.1	7,122.0	12,388.1
Commercial Construction	441.4	441.4	---
Other	4,243.9	4,243.9	---
Site Development	552.2	552.2	---
Total	33,507.7	20,239.8	13,267.9

⁵³ West Pinal County PM₁₀ Plan, Chapters 6 and 7.

Source: West Pinal County PM₁₀ Plan, Table 5-3; Appendix B, Tables 5-31, 5-32, 5-33, 5-34.

Table 4. Activity Based Emissions, 2018 Base and Attainment Emissions Inventories with Estimated Emission Reductions (tpy)			
Source Category	Base 2018	Attainment 2018	Emission Reductions
Ag – Harvesting	312.9	207.1	105.8
Ag – Tilling	2,540.3	1,658.0	882.3
CAFOs	1,620.6	1,369.2	251.4
Paved Road*	1,408.0	1,408.0	---
Unpaved Road*	45,105.3	37,186.4	7,918.9
Fuel Combustion	34.9	34.9	---
Fires	22.2	22.2	---
Open Burning	16.8	16.8	---
Nonroad	144.4	144.4	---
Railroad	45.4	45.4	---
Construction	8,499.8	8,499.8	---
Dairy	184.0	184.0	---
Permitted Sources	781.3	781.3	---
Unpaved Parking	251.5	251.5	---
Total	60,967.4	51,809.0	9,158.4

Source: West Pinal County PM₁₀ Plan, Table 5-3; Appendix B, Tables 5-31, 5-32, 5-33, 5-34

*Paved and Unpaved Road emissions estimates include direct vehicle emissions and fugitive dust emissions from vehicle re-entrainment.

The State adopted and pre-implemented control measures to meet the contingency measures requirement within the Plan: the portion of the AgBMP Rules for Pinal County applicable to dairy operations (R18-2-611 and -611.03), along with the Pinal County Fugitive Dust Rule and the Pinal County Construction Dust Rule.⁵⁴ We address the contingency measures requirement of the Act more completely in Section III.F, where we point out that pre-implemented contingency measures are not approvable under CAA section 172(c)(9). Here, we mention the control measures, adopted and subsequently implemented as contingency measures, to emphasize two points: (1) given the shortfall in attaining the PM₁₀ NAAQS, these control measures designated for contingency should have been evaluated and designated RACM/RACT, as we discussed in Section III.C; and (2) despite implementing the RACM/RACT control

⁵⁴ West Pinal County PM₁₀ Plan, Chapter 6; Chapter 7, Table 7-4.

measures for attainment and the designated contingency measures, the West Pinal County area still failed to attain the PM₁₀ NAAQS, by a large margin.

3. The EPA's Review of the State's Submission

As previously discussed, the EPA issued a finding that the West Pinal County area failed to attain the PM₁₀ NAAQS by the outermost statutory attainment date of December 31, 2018.⁵⁵ In addition to our previous regulatory review of the air monitoring data from 2016-2018, detailed in our June 24, 2020 notice, we reviewed ambient air monitoring data collected from 2006-2018 to examine PM₁₀ values over time and recent trends over the 2016-2018 control strategy period of Plan implementation. Our detailed review of PM₁₀ data is included in our TSD provided in the docket for this proposal. We provide two general conclusions from our data review.

First, when considering the number of exceedances of the PM₁₀ standard, the data show that the West Pinal County monitoring sites have consistently measured many exceedances in every year between the start of the base year period, 2006-2008, and in 2018, the attainment year. While the number of exceedances each year has generally and gradually decreased over time, there is no clear evidence of a sustained decrease in recent years as ADEQ implemented control measures. For example, over the 2016 through 2018 period that would have been relevant to attainment by December 31, 2018, the annual number of exceedances of the 24-hour PM₁₀ NAAQS ranged from 29 to 38.⁵⁶ The form of the NAAQS allows for no more than one exceedance per year, averaged over a three year period. Furthermore, all eight monitors in the West Pinal County nonattainment area showed violations of the PM₁₀ NAAQS as determined by their 2018 design values.⁵⁷

Second, design value trends show that the number of expected exceedances remain well above the PM₁₀ NAAQS of one exceedance per year. The high concentrations and number of exceedances clearly show that PM₁₀ concentrations well above the level of the NAAQS (150

⁵⁵ 85 FR 37756.

⁵⁶ See Table 2 in the TSD.

⁵⁷ See Table 1 in the TSD.

$\mu\text{g}/\text{m}^3$) continue to be a major air quality problem in the West Pinal County nonattainment area despite the implementation of control measures meant to reduce PM_{10} levels. For example, the design concentration for 2016-2018, the period in which values should be at or under $150 \mu\text{g}/\text{m}^3$ to show attainment by 2018, is $403 \mu\text{g}/\text{m}^3$, or 269 percent of the standard.⁵⁸

Table 5. Three-Year PM_{10} Monitoring Data Statistics for the Cowtown and Hidden Valley Monitoring Sites.^a											
3-Year Period	2006-2008	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013	2012-2014	2013-2015	2014-2016	2015-2017	2016-2018
Design Concentration ($\mu\text{g}/\text{m}^3$)	916	653	539	1064	1064	1064	521	510	357 ^b	303 ^b	403
3-year Design Value	201.2	139.8	86.1	60.7	63	75.7	64	50.5	38.3 ^b	29.8 ^b	32.8
Sources: EPA AQS Quick Look Report, December 10, 2020, and EPA AQS Design Value Report, December 10, 2020. The design concentration for these sites is the 4 th highest 24-hour concentration measured over each three-year period, as detailed in Section 6.3.1 of the PM_{10} SIP Development Guideline, EPA-450/2-86-001 (June 1987). ^a Data collected prior to 2016 were collected from the Cowtown monitoring site; data since 2016 were collected at the Hidden Valley monitoring site, as described in our TSD, page 6, within the docket for this rulemaking. ^b The EPA's relocation approval letter stated that the data from Cowtown and Hidden Valley would be combined to form one continuous data record for design value calculations. Consequently, the 2014-2016 and 2015-2017 design values are each a composite data record consisting of 2014 and/or 2015 data from the Cowtown monitoring site, and 2016 and/or 2017 data from the Hidden Valley monitoring site, as applicable.											

The West Pinal County 2015 PM_{10} design value was 50.5 exceedances. For the area to meet the PM_{10} standard by 2018, it could not have more than three exceedances of the PM_{10} NAAQS across the three years, 2016-2018, to show a design value of 1.0 exceedances, averaged over three years. Instead, the Plan's control strategy resulted in the following number of primary exceedances: 30 in 2016; 38 in 2017; and 29 in 2018.⁵⁹ Not only did the Plan's control strategy fail to produce the effect intended in 2016, the designated control strategy rules and pre-implemented contingency measures failed to reduce PM_{10} exceedances to a level needed to attain the PM_{10} standard by December 31, 2018.

Given the ambient monitoring data unequivocally indicate that the Plan was insufficient to achieve attainment by the 2018 attainment date, we do not provide an exhaustive evaluation of

⁵⁸ See Table 3 and further discussion in Section II.B of the TSD.

⁵⁹ TSD, Table 2; EPA AQS Quick Look Report, December 10, 2020, in the docket for this rulemaking action.

the attainment demonstration analyses in the West Pinal County PM₁₀ Plan. Instead, we focused our review on two major deficiencies that preclude our approval of this Plan element. Our review of these two deficiencies is illustrative of the insufficiently conservative analyses or assumptions underlying the Plan's failed attainment demonstration. Specifically, we evaluated the "design days" ADEQ selected to conduct the modeling exercises and the specific design day micro-emissions inventories and rule control effectiveness assumptions ADEQ made to model the Plan's control strategy within the 2018 attainment modeling analyses. Next, we provide a short summary of our review. We also provide a more detailed review in our TSD.

First, we find the design days that ADEQ selected for modeling the Cowtown monitor under stagnation conditions, and several monitors under high wind conditions, were chosen with inconsistent criteria and/or have data inaccuracies. In turn, these inconsistencies and inaccuracies led to design day concentration values that were likely too low to address adequately the range of exceedances experienced in the nonattainment area. For example, in selecting the stagnation scenario design day for Cowtown, ADEQ limited selection to fall 2008 (September to November) exceedance days despite the higher PM₁₀ concentrations and a comparable number of exceedance days in the spring season (March to May). Ultimately, the selected 2008 design day was the 68th highest out of the 137 total low wind/stagnation exceedance days identified by the State (i.e., approximately 49% of the low wind/stagnation exceedance days had higher concentrations than the design day selected).⁶⁰ This middle range day was insufficiently conservative and was inadequate to represent the attainment issues during stagnation conditions and to address the range and severity of exceedances experienced at CWT.⁶¹

Second, we conclude that several data inputs and assumptions associated with modeling the control strategy were unsupported, overstated, or insufficiently conservative leading to an

⁶⁰ "Low wind/stagnation exceedance days" for purposes of this document are the exceedance days that remain once days identified by ADEQ as high wind day exceedances in IPP, Appendix C, Table C-1 are removed. See "Cowtown 2008 Exceedances.xlsx" in the docket for this action.

⁶¹ See Section III.B.1. of the TSD for our complete review of design day selection for stagnation scenario at the Cowtown monitor. Also, see Section III.B.2 of the TSD for our complete review of design day selection for the high wind scenario.

overestimate of the overall efficacy of the control strategy within the attainment demonstration. Specifically, in calculating the control effectiveness of the rules in the control strategy, two component assumptions or estimates were the primary cause of this overestimate: (1) rule effectiveness, i.e., the percentage of compliant facilities; and, (2) aggregate or net best management practices (BMP) control efficiencies. For example, we found that despite limited or no compliance data, the lack of compliance assistance program efficacy figures, the lack of automatic reporting requirements, and little to no farm experience implementing BMPs, ADEQ assumed high compliance rates with the AgBMP rule; in turn, this unjustifiably inflated the overall control effectiveness calculations. In addition, we found that the domain modeling micro-emissions inventory estimates that ADEQ derived from this limited BMP implementation data were not appropriately documented or supported and were insufficiently conservative due to overly optimistic or simplifying assumptions used to aggregate BMP control efficiency estimates, such as assuming that farms will either choose not to operate or will routinely implement higher cost and higher control efficiency BMPs on high risk days. Consequently, ADEQ assumed farms reduced emissions from cropland operations and unpaved roads to a greater extent than what could be supported by the documentation in the Plan.⁶²

Based on our evaluation of the design days and modeling and control effectiveness assumptions in the Plan, we find that these several deficiencies in the analyses preclude approval of the attainment demonstration. In addition, after reviewing past and recent PM₁₀ data against the West Pinal County PM₁₀ Plan's attainment demonstration predictions, we conclude that:

- There is no clear evidence of a sustained decrease in the number of exceedances in recent years as control measures have been implemented (2015-2018);
- PM₁₀ concentrations well above the level of the 24-hour PM₁₀ NAAQS (150 µg/m³) continue to be a major air quality problem in the West Pinal County nonattainment area

⁶² See Section III.C. of the TSD for our complete review of control effectiveness estimates.

despite the implementation of control measures designed to reduce PM₁₀ levels thus far;
and

- The Plan's control strategy, whether considered as adopted RACM/RACT or as the entire suite of rules submitted with the Plan, was inadequate to attain the PM₁₀ NAAQS by December 31, 2018, as evidenced by the ambient PM₁₀ data.

Consequently, we propose to disapprove the modeled attainment demonstration in the West Pinal County PM₁₀ Plan because it does not meet the requirements of CAA section 189(a)(1)(B) and section 188(c)(1).

E. Reasonable Further Progress Demonstration

1. Statutory and Regulatory Requirements

The requirement for RFP in PM₁₀ nonattainment areas is specified in CAA section 172(c)(2) and is described in the General Preamble.⁶³ Under CAA section 171(1), RFP is defined as meaning such annual incremental reductions in emissions of the relevant air pollutant as are required under part D ("Plan Requirements for Nonattainment Areas") of the CAA or as may reasonably be required by the EPA for the purpose of ensuring attainment of the applicable NAAQS by the applicable date. In addition, CAA section 189(c)(1) requires quantitative milestones that demonstrate RFP and must be achieved every 3 years until the nonattainment area is redesignated to attainment, beginning 4.5 years after a Moderate area's designation to nonattainment of the PM₁₀ NAAQS.⁶⁴ Therefore, Moderate area plans should contain quantitative milestones for 4.5 and 7.5 years after designation. These quantitative milestones should be constructed so that they can be tracked, quantified and/or measured adequately, and provide for an objective evaluation of RFP toward attainment of the NAAQS, particularly as part of milestone reporting.⁶⁵

2. Summary of the State's Submission

⁶³ 57 FR at 13539.

⁶⁴ Ibid.

⁶⁵ 81 FR 58063-64.

The West Pinal County PM₁₀ Plan discusses how the Plan provides for RFP in Section 7.2 and Appendix D and provides visual representation in Figure 7-1 and Figure D 5-1.⁶⁶ For the purposes of calculating annual increments of emission reductions for RFP, ADEQ assumed a linear “glidepath” with equal annual emissions reductions over the 2016-2018 implementation timeframe. This annual increment representing RFP is 7,475 tons per year.⁶⁷ The implementation of the Plan’s control strategy is projected to produce almost all the needed emissions reductions in the first year, 2016, with slight and incremental emission reductions to follow in 2017 and 2018. Because ADEQ projected that most of the emissions reductions would come in the first year, the projected emissions were below the “glidepath” and ADEQ concluded that RFP was demonstrated.

3. The EPA’s Review of the State’s Submission

Based in part on our review of the 2016-2018 ambient data and in part on the flaws identified in the West Pinal County PM₁₀ Plan attainment demonstration, we find that ADEQ did not adequately provide for annual increments of emissions reductions needed to attain the PM₁₀ NAAQS by 2018. Because the West Pinal County PM₁₀ plan failed to achieve attainment by the attainment date, the RFP demonstration based on the rate by which these reductions were to occur is also necessarily deficient. This was borne out by the monitoring data; no real rate of reduction of exceedances can be demonstrated over the period of implementation of the Plan’s control measures, 2016-2018. Indeed, even with the early implementation of additional controls designated by the State as contingency measures to provide emissions reductions in the event of a failure to show RFP or to attain, West Pinal County still exceeded the PM₁₀ standard by a large margin as evidenced by the data in Table 5.

Regarding quantitative milestones, given the EPA’s 2012 designation of nonattainment for West Pinal County, the State should have included quantitative milestones for mid-2016 and

⁶⁶ West Pinal County PM₁₀ Plan, 99 and Figure 7-1, 101; Appendix D, 45.

⁶⁷ West Pinal County PM₁₀ Plan, 100. Expected emission reductions from 2015 to 2018, 22,426 tons per year, are divided into 3 annual increments of 7,475 tons per year.

mid-2019 within the West Pinal County PM₁₀ Plan. Aside from the two glidepath depictions in Figure 7-1, the Plan provides no further discussion of quantitative milestones. What is presented in Figure 7-1 does not meet the criteria that the Plan's quantitative milestones should be trackable, quantified, and provide for an objective evaluation of RFP toward attainment of the NAAQS, by mid-2016. The West Pinal County PM₁₀ Plan does not address RFP or quantitative milestones in mid-2019.

For these reasons, we have determined that the West Pinal County PM₁₀ Plan fails to demonstrate RFP, consistent with applicable CAA requirements and EPA guidance. Therefore, we propose to disapprove the RFP demonstration and quantitative milestones for the West Pinal County area for the 24-hour PM₁₀ NAAQS under sections 172(c)(2) and 189(c)(1).

F. Contingency Measures

1. Statutory and Regulatory Requirements

Under the CAA, states must include contingency measures consistent with section 172(c)(9) in their nonattainment plan SIP submissions. Contingency measures are additional controls or measures to be implemented in the event the area fails to meet RFP or to attain the NAAQS by the applicable attainment date. The SIP should contain trigger mechanisms for the contingency measures, specify a schedule for implementation, and indicate that the measure will be implemented without significant further action by the state or the EPA.⁶⁸

Neither the CAA nor the EPA's implementing regulations establish a specific level of emissions reductions that implementation of contingency measures must achieve, but the General Preamble reiterates the EPA's guidance recommendation that contingency measures should generally provide for emissions reductions approximately equivalent to one year's worth of RFP in the area.⁶⁹ Where a failure to attain or to meet RFP can be corrected in less than one year, the EPA may accept a proportionally lesser amount sufficient to correct the identified failure.⁷⁰

⁶⁸ 81 FR 58066 (August 24, 2016).

⁶⁹ 57 FR 13498, 13543-13544.

⁷⁰ Id. at 13511.

It has been the EPA's longstanding interpretation of CAA section 172(c)(9) that states may meet the contingency measure requirement by relying on Federal measures (e.g., Federal mobile source measures based on the incremental turnover of the motor vehicle fleet each year) and state or local measures already scheduled for implementation that provide emissions reductions in excess of those needed to meet any other nonattainment plan requirements, such as RACM/RACT, RFP, or expeditious attainment. The key is that the Act requires that contingency measures provide for additional emissions reductions that are not relied on for RFP or attainment and that are not included in the RFP or attainment demonstrations as meeting part of or all the contingency measure requirements. The purpose of contingency measures is to provide continued emissions reductions while a plan is being revised to meet the missed milestone or attainment date.

In *Bahr v. EPA*, the Ninth Circuit Court of Appeals rejected the EPA's interpretation of CAA section 172(c)(9) as allowing for early implementation of contingency measures.⁷¹ The Ninth Circuit concluded that contingency measures must take effect at the time the area fails to make RFP or attain by the applicable attainment date, not before.⁷² Consequently, within the geographic jurisdiction of the Ninth Circuit, states cannot rely on early-implemented measures to comply with the contingency measure requirements under CAA section 172(c)(9).⁷³

2. Summary of the State's Submission

ADEQ developed the West Pinal County PM₁₀ Plan prior to the *Bahr v. EPA* decision, and the plan relies solely upon surplus emissions reductions from already implemented control measures during the 2016-2018 period to demonstrate compliance with the contingency measure requirements of CAA section 172(c)(9). The West Pinal County PM₁₀ Plan included the following early implemented state and local regulations to meet the contingency measures

⁷¹ *Bahr v. EPA*, 836 F.3d 1218, 1235-1237 (9th Cir. 2016).

⁷² *Id.* at 1235-1237.

⁷³ The *Bahr v. EPA* decision involved a challenge to an EPA approval of contingency measures under the general nonattainment area plan provisions for contingency measures in CAA section 172(c)(9), but, given the similarity between the statutory language in section 172(c)(9) and the ozone-specific contingency measure provision in section 182(c)(9), we find that the decision affects how both sections of the Act must be interpreted.

requirement for the PM₁₀ standard: the portion of the AgBMP Rules for Pinal County applicable to dairy operations (R18-2-611 and -611.03), and the Pinal County Fugitive Dust Rule and Construction Dust Rule.⁷⁴ Contingency Measures are also discussed in Appendix D.⁷⁵

3. The EPA's Review of the State's Submission

Arizona is within the geographic jurisdiction of the Ninth Circuit Court of Appeals; therefore, after the *Bahr v. EPA* decision, the State cannot rely on already-implemented control measures to comply with the contingency measure requirement of CAA section 172(c)(9). To comply with CAA section 172(c)(9), as interpreted in the *Bahr v. EPA* decision, a state must develop, adopt and submit contingency measures to be triggered upon a failure to meet RFP milestones or failure to attain the NAAQS by the applicable attainment date regardless of the extent to which already-implemented measures would achieve surplus emissions reductions beyond those necessary to meet RFP milestones and beyond those predicted to achieve attainment of the NAAQS. Arizona's adopted and pre-implemented contingency measures do not comply with these requirements for failure to make RFP and failure to meet attainment contingency measures. Section 172(c)(9) requires contingency measures to address potential failures to achieve RFP milestones or failure to attain the NAAQS by the applicable attainment date. For these reasons, we propose to disapprove the contingency measures element of the West Pinal County PM₁₀ Plan as failing to meet the contingency measure requirements of CAA sections 172(c)(9).

G. Motor Vehicle Emissions Budgets for Transportation Conformity

1. Statutory and Regulatory Requirements

Section 176(c) of the CAA requires Federal actions in nonattainment and maintenance areas to conform to the goals of the state's SIP to eliminate or reduce the severity and number of violations of the NAAQS and achieve timely attainment of the standards. Conformity to the

⁷⁴ West Pinal County PM₁₀ Plan, Chapter 6; Chapter 7, Table 7-4.

⁷⁵ Appendix D, 45, Table D5-1.

goals of the SIP means that such actions will not: (1) cause or contribute to violations of a NAAQS, (2) worsen the severity of an existing violation, or (3) delay timely attainment of any NAAQS or any interim milestone.

Actions involving Federal Highway Administration (FHWA) or Federal Transit Administration (FTA) funding or approval are subject to the EPA's transportation conformity rule, codified at 40 CFR part 93, subpart A. Under this rule, metropolitan planning organizations (MPOs) in nonattainment and maintenance areas coordinate with state and local air quality and transportation agencies, the EPA, the FHWA, and the FTA to demonstrate that an area's regional transportation plans and transportation improvement programs conform to the applicable SIP. This demonstration is typically done by showing that estimated emissions from existing and planned highway and transit systems are less than or equal to the motor vehicle emissions budgets (MVEBs or "budgets") contained in all control strategy attainment plans designed to attain the NAAQSs. Budgets are generally established for specific years and specific pollutants or precursors. Attainment plans for PM₁₀ nonattainment areas should identify budgets for mobile source emissions of PM₁₀, i.e., vehicle and fugitive dust emissions, in the area for each RFP milestone year, as appropriate, and the attainment year, if the plan demonstrates attainment.⁷⁶

For budgets to be approvable, they must meet, at a minimum, the EPA's adequacy criteria at 40 CFR 93.118(e)(4). To meet these requirements, the budgets must be consistent with the attainment and RFP requirements and reflect all the motor vehicle control measures contained in the attainment and RFP demonstrations.⁷⁷ Budgets may include a safety margin representing the difference between projected emissions and the total amount of emissions estimated to satisfy any requirements for attainment or RFP.

⁷⁶ 40 CFR 93.102(b)(1).

⁷⁷ 40 CFR 93.118(e)(4)(iii), (iv) and (v). For more information on the transportation conformity requirements and applicable policies on MVEBs, please visit our transportation conformity web site at: <http://www.epa.gov/otaq/stateresources/transconf/index.htm>.

The EPA's process for determining adequacy of a budget consists of three basic steps: (1) providing public notification of a SIP submission; (2) providing the public the opportunity to comment on the budget during a public comment period; and (3) making a finding of adequacy or inadequacy.⁷⁸

2. Summary of the State's Submission

The West Pinal County PM₁₀ Plan includes a budget for the 2018 attainment year. As discussed in Section III.E, we are proposing to disapprove the RFP and quantitative milestones elements of the Plan. No interim RFP budget was submitted for 2016. The State's submitted 2018 conformity budget for PM₁₀ for the West Pinal County Area is provided in Table 6.

Table 6. 2018 Motor Vehicle Emissions Budget for the West Pinal County PM₁₀ Nonattainment Area (tons per year)	
Source	Emissions
Direct On-Road Mobile Sources (exhaust, tire and brake wear)	173.7
Unpaved Road Fugitive Dust	26,433.5
Paved Road Fugitive Dust	1,211.1
Road Construction/Maintenance	168.8
Total	27,987.1

Source: West Pinal County PM₁₀ Plan, Table 5-4.

The methodologies ADEQ used to develop the motor vehicle emissions budget are provided in Appendix B of the West Pinal County PM₁₀ Plan.⁷⁹ As discussed in section III.A. of this proposal, ADEQ used MOVES2014 in the development of this budget; this emissions factor model was the latest EPA approved version at the time the West Pinal County PM₁₀ Plan was developed. Paved road vehicle miles traveled (VMT) estimates for estimating direct and fugitive PM₁₀ emissions were provided by MAG using an interpolation methodology where 2018 VMT was estimated from 2015 and 2025 regional transportation modeling runs.⁸⁰ ADEQ used the most recently approved EPA provided AP-42 emissions factor equations to develop paved and

⁷⁸ 40 CFR 93.118(f)(2).

⁷⁹ Appendix B, 120-137, and 166-180.

⁸⁰ Appendix B, 120.

unpaved road fugitive dust emissions estimates.⁸¹ In addition to the line item source categories in the 2018 budget presented in Table 6, ADEQ specified that the budget includes an 81 ton per year safety margin.⁸²

The EPA has neither found this 2018 budget to be adequate, nor have we acted on it in the past.

3. The EPA's Review of the State's Submission

As part of our review of the approvability of the motor vehicle emissions budget in the West Pinal County PM₁₀ Plan, we have evaluated the budget using the adequacy criteria specified in the transportation conformity rule.⁸³ Reviewing the budget against the criteria in the transportation conformity rule informs the EPA's decision to propose our action on the budget. We have determined that the 2018 budget submitted by Arizona for the West Pinal County area has not met several of these criteria.

First and foremost, § 93.118(e)(4)(iv) requires that a budget, when considered together with all other emissions sources, be consistent with applicable requirements for RFP, attainment, or maintenance (whichever is relevant to a given implementation plan submission). In this case, the West Pinal County area budget is not consistent with the requirements for attainment and RFP, as discussed in Sections III.D and E of this proposal and our proposed disapproval of these two Plan elements. Secondly, the West Pinal County budget is presented in a tons per year format for an attainment plan intended to meet the 24-hour PM₁₀ NAAQS. The budget must be consistent with the 24-hour timeframe of the attainment demonstration and PM₁₀ standard, and therefore should be presented in a tons per day format. Finally, § 93.118(e)(4)(iii) requires that the budget be clearly identified and precisely quantified. Although ADEQ describes an “allowance or safety margin” in the West Pinal County PM₁₀ Plan, the submitted budget does not

⁸¹ ADEQ used the appropriate AP-42 guidance in sections 13.2.1 and 13.2.2 to calculate fugitive dust from paved and unpaved roads. The AP-42 emission factor equation inputs for estimating unpaved road fugitive dust emissions can be found in Appendix B, Table 5-11. The most recent EPA revision and approval of these AP-42 emission factor equations occurred in 2011 and are reflected in the Plan's estimates; 76 FR 6328 (February 4, 2011).

⁸² West Pinal County PM₁₀ Plan, 62.

⁸³ 40 CFR 93.118(e)(4) and (5).

clearly and explicitly identify this safety margin in its presentations of the budget.⁸⁴ Also, a safety margin, as defined in the Transportation Conformity rule, § 93.101, must be clearly presented and demonstrated to be outside and above the emissions level demonstrating attainment, but below the threshold of the applicable NAAQS.

We have reviewed the motor vehicle emissions budget in the West Pinal County PM₁₀ Plan and find that it does not meet applicable statutory and regulatory requirements including the adequacy criteria in 40 CFR 93.1118(e)(4) and (5). The primary deficiency is that the submitted 2018 budget is not consistent with, or derived from, a demonstration of attainment and RFP meeting the requirements of the Act. As discussed earlier in sections III.D and III.E, we are proposing herein to disapprove the Plan's attainment and RFP demonstrations. Therefore, we are proposing to disapprove the 2018 budget in the West Pinal County PM₁₀ Plan. In addition, because we are disapproving the attainment and RFP demonstrations, the 2018 budget is not eligible for a protective finding.⁸⁵

If our proposed disapproval of the 2018 budget is finalized, upon the effective date of our final rule, the area would be subject to a conformity freeze under § 93.120 of the Transportation Conformity rule. No transportation project outside of the first four years of the currently conforming transportation plan and transportation improvement plan (TIP) or that meets the requirements of § 93.104(f) during the resulting conformity freeze may be found to conform until Arizona submits a new PM₁₀ control strategy/attainment plan, the EPA finds the submitted budget adequate per § 93.118 or approves the new control strategy/attainment plan and conformity to the new control/strategy implementation plan is determined.⁸⁶ Furthermore, if, as a result of our final disapproval action, the EPA imposes highway sanctions under section 179(b)(1) of the Act two years from the effective date of our final rule, then the conformity status of the transportation plan and TIP will lapse on that date and no new transportation plan, TIP, or

⁸⁴ West Pinal County PM₁₀ Plan, Table 5-4; Appendix D, Table D4-4.

⁸⁵ 40 CFR 93.120(a)(3).

⁸⁶ 40 CFR 93.120(a)(2).

project may be found to conform until Arizona submits a new PM₁₀ attainment plan, and conformity to this attainment plan is determined.⁸⁷

IV. Proposed Action

For the reasons discussed in this notice, under CAA section 110(k)(3), the EPA is proposing to approve and disapprove the following portions of the West Pinal County PM₁₀ Plan, submitted by the State on December 21, 2015. Our proposed approval and disapproval actions are as follows:

- We propose to approve the 2008 base year emissions inventory element for direct PM₁₀ in the West Pinal County PM₁₀ Plan as meeting the requirements of CAA sections 172(c)(3) for the 1987 PM₁₀ NAAQS;
- We propose to disapprove the precursor demonstration in the West Pinal County PM₁₀ Plan because the demonstration is inadequate to show that emissions reductions from all PM₁₀ precursors do not contribute significantly to PM₁₀ levels exceeding the NAAQS, as required by CAA Section 189(e) for the 1987 PM₁₀ NAAQS;
- We propose to disapprove the RACM/RACT demonstration element in the West Pinal County PM₁₀ Plan because it does not meet the requirements of CAA section 172(c)(1) and section 189(a)(1)(C) for the 1987 PM₁₀ NAAQS; furthermore, the deficiencies in the State's precursor analysis mean that the State failed to establish in its RACM/RACT analysis that it was unnecessary to regulate PM₁₀ precursor emissions;
- We propose to disapprove the modeled attainment demonstration element for the 1987 PM₁₀ NAAQS in the West Pinal County PM₁₀ Plan because it does not meet the requirements of CAA section 189(a)(1)(B) and section 188(c)(1) to demonstrate attainment of the 1987 PM₁₀ NAAQS;

⁸⁷ 40 CFR 93.120(a)(1).

- We propose to disapprove the RFP demonstration element in the West Pinal County PM₁₀ Plan because it does not meet the requirements of CAA sections 172(c)(2) for the 1987 PM₁₀ NAAQS;
- We propose to disapprove the quantitative milestones element in the West Pinal County PM₁₀ Plan because it does not meet the requirements of CAA section 189(c)(1) for the 1987 PM₁₀ NAAQS;
- We propose to disapprove the contingency measures element of the West Pinal County PM₁₀ Plan because it does not meet the requirements of CAA section 172(c)(9) for the 1987 PM₁₀ NAAQS; and,
- We propose to disapprove the motor vehicle emissions budget in West Pinal County PM₁₀ Plan for the attainment year of 2018 (see Table 6) because it is not consistent with or derived from, approvable RFP or and attainment demonstrations for the 1987 PM₁₀ NAAQS meeting the requirements of the Act.

The EPA is soliciting public comments on the issues discussed in this proposed rule. We will accept comments from the public on this proposal for the next 30 days and will consider those comments before taking final action.

V. Statutory and Executive Order Reviews

Additional information about these statutes and Executive orders can be found at <http://www.epa.gov/laws-regulations/laws-and-executive-orders>.

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not a significant regulatory action and was therefore not submitted to the Office of Management and Budget (OMB) for review.

B. Executive Order 13771: Reducing Regulations and Controlling Regulatory Costs

This action is not an Executive Order 13771 regulatory action because SIP approvals, including partial approvals, are exempted under Executive Order 12866.

C. Paperwork Reduction Act (PRA)

This action does not impose an information collection burden under the PRA because this action does not impose additional requirements beyond those imposed by state law.

D. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. This action will not impose any requirements on small entities beyond those imposed by state law.

E. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. This action does not impose additional requirements beyond those imposed by state law. Accordingly, no additional costs to state, local, or tribal governments, or to the private sector, will result from this action.

F. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the National Government and the states, or on the distribution of power and responsibilities among the various levels of government.

G. Executive Order 13175: Coordination with Indian Tribal Governments

This action does not have tribal implications, as specified in Executive Order 13175, because the SIP is not approved to apply on any Indian reservation land or in any other area where the EPA or an Indian tribe has demonstrated that a tribe has jurisdiction, and will not impose substantial direct costs on tribal governments or preempt tribal law. Thus, Executive Order 13175 does not apply to this action.

H. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of “covered regulatory action” in section 2-202 of the Executive order. This action is not subject to Executive Order 13045 because it does not impose additional requirements beyond those imposed by state law.

I. Executive Order 13211: Actions that Significantly Affect Energy Supply, Distribution, or Use

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

J. National Technology Transfer and Advancement Act (NTTAA)

Section 12(d) of the NTTAA directs the EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. The EPA believes that this action is not subject to the requirements of section 12(d) of the NTTAA because application of those requirements would be inconsistent with the CAA.

K. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

The EPA lacks the discretionary authority to address environmental justice in this rulemaking.

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Intergovernmental relations, Particulate matter, Reporting and recordkeeping requirements.

Authority: 42 U.S.C. 7401 *et seq.*

Dated: December 23, 2020.

John Busterud,
Regional Administrator,
Region IX.

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